

In the Claims:

1 1. (Currently amended) A method ~~of using wastewater in the~~
2 ~~processing of~~ for preparing fuels fuel for a high
3 temperature fuel cell, comprising the following steps:

4 a) collecting wastewater and processing said ~~water~~
5 wastewater by one or more steps of filtration, reverse
6 osmosis, and ~~cleaning~~ cleaning, excluding
7 distillation, to produce prepared ~~water, wastewater,~~

8 b) ~~using as said fuels~~ providing a liquid hydrocarbon
9 [[fuel]] fuel, and

10 c) emulsifying said ~~liquified~~ liquid hydrocarbon fuel
11 with said prepared ~~water~~ wastewater to form an
12 emulsion as said fuel for said high temperature fuel
13 cell.

1 2. (Currently amended) The method of claim 1, further
2 comprising a step of cracking said liquid hydrocarbon ~~fuels~~
3 fuel to convert an initial long hydrocarbon chain bond into
4 a shorter hydrocarbon chain bond, and performing said
5 cracking step as an electrochemical and thermal catalytic
6 step.

1 3. (Currently amended) The method of claim 1, further
2 comprising the step of catalytically withdrawing sulfur and
3 sulfur compounds including hydrogen sulfide [[form]] from
4 said emulsion prior to using said emulsion as fuel.

4532/WGF:kd.

- 2 -

1 4. (Currently amended) The method of claim 1, further
2 comprising supplying said hydrocarbon fuel and said
3 wastewater into a common container and then performing said
4 emulsifying step by exposing said prepared ~~water~~ wastewater
5 and said liquid hydrocarbon fuel to a sound vibration in
6 said common container.

1 5. (Original) The method of claim 4, wherein said step of
2 exposing is performed by introducing said liquid
3 hydrocarbon fuel and said prepared water into said common
4 container directly in front of an ultra-sound vibrator.

1 6. (Original) The method of claim 5, further comprising
2 feeding variable quantities of said prepared water and said
3 hydrocarbon fuels into said common container.

1 7. (Original) The method of claim 1, wherein said step of
2 emulsifying is performed continuously.

1 8. (Currently amended) The method of claim 1, further
2 comprising monitoring said emulsifying step for providing
3 information regarding ~~[[said]]~~ an emulsion quality and
4 using said information for controlling in closed loop
5 fashion process steps for producing said emulsion.

1 9. (Original) The method of claim 1, further comprising
2 starting said high temperature fuel cell with CH₄ (methane,
3 natural gas) as fuel until an operating temperature of said

fuel cell has been reached, and then switching over said fuel cell to receive said emulsion as its fuel.

10. (Original) The method of claim 9, further comprising performing said switching over continuously in an overlapping and stepless manner, whereby emulsion and CH_4 are used together as fuel.

11. (Currently amended) The method of claim 1, further comprising the step of dosing said prepared water wastewater and said hydrocarbon fuel through positive feed dosing pumps which do not permit any backflow.

12. (Original) The method of claim 11, further comprising electronically controlling said positive-feed dosing pumps in a closed loop manner in response to performance parameters of the high temperature fuel cell or in response to emulsion quality parameters.

13. (Original) The method of claim 12, further including in said electronically controlling step a switch-off function for shutting down the supply of hydrocarbon fuel in response to an emergency.

14. (Original) The method of claim 2, wherein said cracking step is performed inside a separate housing which is positioned inside an enclosure of said high temperature fuel cell.

4532/WGF:kd

- 4 -

1 15. (Original) The method of claim 14, further comprising using
2 thermal energy of said high temperature fuel cell for
3 performing said cracking step.

1 16. (Original) The method of claim 3, further comprising
2 performing said step of catalytically withdrawing sulfur
3 and sulfur compounds including hydrogen sulfide in a
4 separate housing which is positioned inside an enclosure of
5 said high temperature fuel cell.

1 17. (Original) The method of claim 16, further comprising using
2 thermal energy of said high temperature fuel cell for
3 performing said withdrawing step for desulfurizing said
4 emulsion.

1 18. (Currently amended) The method of claim 3, further
2 comprising performing said step of catalytically
3 withdrawing sulfur and sulfur compounds including hydrogen
4 sulfide from said emulsion, by chemically binding said
5 sulfur and sulfur compounds including hydrogen sulfide to
6 form stable compounds and avoiding discharging said stable
7 compounds into the atmosphere.

1 19. (Original) The method of claim 1, further comprising
2 performing, directly following said emulsifying step, an
3 electrochemical process for cracking or separating
4 molecular bindings of organic compounds of said emulsion.

4532/WGF:kd

- 5 -

1 20. (Original) The method of claim 19, wherein said
2 electrochemical process is performed by passing said
3 emulsion through an electric gap to subject said emulsion
4 to a gap-electrolysis process.

1 21. (Currently amended) The method of claim 20, further
2 comprising forming said electric gap between two
3 electrically conducting cylindrical members ~~arranged by~~
4 arranging said two electrically conducting members
5 concentrically one within the other, connecting one
6 cylindrical member to a positive pole of a d.c. power
7 source and connecting the other cylindrical member to a
8 negative pole of said d.c. power source.

1 22. (Currently amended) The method of claim 21, comprising
2 using two pipes as said electrically conducting cylindrical
3 members, arranging said two pipes concentrically ~~to each~~
4 one within the other, and connecting said two pipes to
5 respective electrodes of said high temperature fuel cell as
6 said d.c. power source.

1 23. (Original) The method of claim 20, further comprising
2 measuring an electrical conductivity of said emulsion and
3 then performing said gap-electrolysis when said electrical
4 conductivity of said emulsion is at least 600 μ S.

1 24. (Original) The method of claim 21, wherein said d.c. power
2 source provides a voltage of about 10 volts for starting
3 said cracking of said molecular bindings of said organic
4 compounds of said emulsion.

1 25. (Original) The method of claim 1, further comprising using
2 kerosene as said liquid hydrocarbon fuel.

1 26. (New) A method for preparing fuel for a high temperature
2 fuel cell, said method comprising the following steps:

3 a) collecting wastewater and processing said wastewater
4 by any one or more steps selected from the group
5 consisting of filtration, reverse osmosis and cleaning
6 to produce prepared wastewater,

7 b) supplying a liquid hydrocarbon fuel, and

8 c) emulsifying said liquid hydrocarbon fuel with said
9 prepared wastewater to form an emulsion as said fuel
10 for said high temperature fuel cell.

1 27. (New) An apparatus for preparing fuel for a high
2 temperature fuel cell, said apparatus comprising:

3 a) first means (9, 15) for collecting and preparing
4 wastewater to make the wastewater suitable for
5 emulsification without distillation,

6 b) second means (6,8) for supplying liquid hydrocarbon
7 fuel for said emulsification,

8 c) emulsifying third means (1, 5, 5A) operatively
9 connected to said first means and to said second means

4532/WGF:kd

- 7 -

10 for emulsifying said liquid hydrocarbon fuel with said
11 prepared wastewater to form said fuel as an emulsion
12 for said high temperature fuel cell,
13 d) an enclosure (4) wherein said high temperature fuel
14 cell (10) is housed, and
15 e) a catalyst (2) operatively connected to said
16 emulsifying third means for catalytically withdrawing
17 sulfur and sulfur compounds including hydrogen sulfide
18 from said emulsion to provide a treated emulsion prior
19 to using said treated emulsion in said high
20 temperature fuel cell.

1 28. (New) The apparatus of claim 27, wherein said catalyst (2)
2 comprises a separate housing (2A) positioned inside said
3 enclosure (4) wherein said high temperature fuel cell (10)
4 is housed.

1 29. (New) The apparatus of claim 27, further comprising an
2 electrochemical processing station (16) connected to an
3 output of said emulsifying third means (1) for cracking
4 molecular bindings of organic compounds of said emulsion,
5 said electrochemical processing station 16 having an output
6 (12) operatively connected to said catalyst (2).

1 30. (New) The apparatus of claim 29, wherein said
2 electrochemical processing station (16) comprises an
3 electric gap for subjecting said emulsion to a gap-
4 electrolysis process.

4532/WGF:kd

- 8 -

1 31. (New) The apparatus of claim 30, wherein said electric gap
2 comprises two electrically conducting cylindrical members
3 arranged concentrically one within the other, and wherein
4 one electrically conducting cylindrical member is
5 electrically connected to a positive pole of a d.c. power
6 source, and wherein the other electrically conducting
7 cylindrical member is electrically connected to a negative
8 pole of said d.c. power source.

1 32. (New) The apparatus of claim 31, wherein said two
2 electrically conducting cylindrical members are two pipes
3 arranged concentrically one within the other and
4 electrically connected to said high temperature fuel cell
5 (10) forming said d.c. power source.

[RESPONSE CONTINUES ON NEXT PAGE]

4532/WGF:kd

- 9 -